

Fluorescence *in situ* Hybridization for Detection of 9p21 Chromosomal Band Deletion in Diffuse Large B Cell Lymphoma

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This study aims to apply fluorescence *in situ* hybridization (FISH) in the detection of deletion of 9p21 region in chromosome 9. In comparison with polymerase chain reaction (PCR) detection and Southern blot analysis, FISH analysis has the advantage of allowing simultaneous assessment of cell morphology and status of the gene, thereby; study can be done specifically on the identified tumour cells. Concurrently, false results due to misinterpretation on normal cells can be avoided. FISH also allows detection of gene deletion, amplification or translocation in tumours with small amount of cells. Three vital tumour suppressor genes: p14, p15 and p16 are located in the 9p21 region of chromosome 9. Several genetic alterations of 9p21 region are found to be associated with oncogenesis. Deletion in the 9p21 chromosomal band is common in many human tumours, and gain of chromosome 9 materials is rare. Such chromosomal gain has been reported in primary mediastinal B-cell lymphoma. In this preliminary study, 6 formalin-fixed, paraffin-embedded diffuse large B cell lymphoma (DLBCL) tissues were evaluated for deletion of 9p21 chromosomal band. It was found that homozygous deletion of 9p21 region occurred in 4 DLBCL cases. Two other DLBCL cases, in which deletion of 9p21 region was not detected, showed an increased copy number of chromosome 9 (trisomy and tetrasomy). This method will be expanded to investigate anomalies that may occur in 9p21 chromosomal band on more DLBCL cases.